

sidereal time, but with an uncertainty of several minutes. The satellite was seen again at about 5^h, nearly opposite *Saturn's* north pole.

The following are the results of four nights' measures, reduced to *Saturn's* mean distance (9.5430, according to Bouvard's tables), powers used 365, 365, 277, 277. Mean date of observation, 1853.0123, Greenwich mean time.

Outer Diameter of Outer Ring	39.91
Diameter of fine Division	38.09
Inner Diameter of Outer Ring	35.40
Outer Diameter of Inner Ring	34.67
Inner Diameter of Inner Ring	26.32
Inner Diameter of Faint Ring	22.19
Equatoreal Diameter of Saturn	17.86
Polar Diameter of Saturn	16.51
Breadth of large Division	0.37
Minor Axis of Outer Ring	14.33

Saturn's equatoreal diameter was corrected for phase (0".04.) The above measures agree moderately well with Struve's, as given in *Ast. Soc. Mem.* vol. iii. p. 299, but differ considerably from the values in the *Nautical Almanac*. My breadth of the interval between the rings is 0".04 less than Struve's, and is decidedly too small (owing to the shading off of the outer edge noticed above), the apparent breadth being *estimated* at fully 0".5, or little, if at all, less than the thickness of the micrometer wires which is 0".6. I have not been able to make out any other marks or divisions in the ring than those mentioned above.

On the Parallax of α Herculis. By W. S. Jacob, Esq.

(*Extract of a Letter to the Rev. R. Sheepshanks.*)

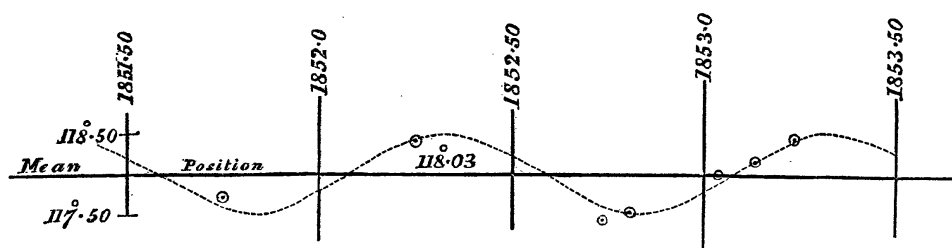
"I write in haste to save a mail, and give you early notice of my observations of α *Herculis*, proving, as I think, the existence of a parallax of about 0".06. I send only the mean results, and a rough tracing of the curve, as the details will appear in the forthcoming volume of our *Memoirs*; but it is desirable that the attention of astronomers should be called to the star, and that my results should if possible be confirmed by some one else. I am just leaving Madras for the hills on account of my health, so that my observations will be interrupted, but I hope to take the subject up again on my return.

"The following are my mean results. You see the course of the curve is pretty well represented, not only by the observations near the extreme points, but also by the intermediate ones. The observations of distance are, of course, not exact enough for detecting so small a quantity, but their evidence is at least not contradictory. The instrument used was the Lerebours' equatoreal (89 in. focus, 6 $\frac{1}{4}$ in. aperture), power in the two first sets 200, being

the highest the maker had furnished with his micrometer. The remainder were taken with a Dollond's micrometer (kindly lent by General Fraser), and with powers of 277 and 365. By far the greater number of observations were by daylight, or I doubt if they would have given such consistent results.

Epoch.	Position. °	No. of Obs.	Distance. "	No. of Obs.
1851.753	117.73	20	4.57	30
1852.252	118.43	25	4.45	30
.736	117.44	25	4.38	24
.801	117.59	35	4.60	42
1853.039	118.03	21	4.54	18
.127	118.13	23	4.63	24
.268*	118.52	26	4.46	26

" Epochs for greatest effect of parallax on the position, .327 and .835, or 30th April and 1st November.



" The dotted line is the curve corresponding to an annual parallax of 0''.059.

" Observatory, Madras, April 12th, 1853."

On the Determination of the Latitude of the Liverpool Observatory by means of Observations made in the Prime Vertical.
By John Hartnup, Esq.

A short time subsequent to the establishment of the Liverpool Observatory, W. H. Simms, Esq., the present Surveyor-General of Ceylon, in a letter which I received from him, incidentally mentioned that he had been getting some observations on the prime vertical for latitude, and that he had found so convenient a formula for correcting the errors in the position of the transit instrument that he could apply it to all stars, whether high or low, with almost the same results. At my request he very kindly sent me the formula, and I applied it in the reduction of a series of observations taken with a transit placed nearly in the prime vertical, for the purpose of determining the latitude of the Liverpool Observatory. This formula has not, I believe, been published; and, with the permission of the author, I, therefore, beg to present it to the Royal Astronomical Society, together with fifty-eight results of co-latitude, in the reduction of which it has been employed.

The following are the formulæ which I received from Mr. Simms:—

* Includes an additional observation taken this morning, 13th April.